What is claimed is:

1. In a VCT control system having a predetermined set point with a set point value and a set point filter filtering the set point and deriving a filtered set point value, the control system generates an error signal by subtracting the measured phase value from the filtered set point value, the control system has a control law for processing the error signal, and the control system further has a method for modifying the error signal for reducing the excessive VCT response time caused by VCT undershooting its filtered set point, the method comprising the steps of:

providing an initial error;

setting the initial error as the error

subtracting the set point value from a phase value if a first set of conditions are met; and

setting the difference of the above step as the error.

2. The method of claim 1 further comprising the steps of:

subtracting the phase value from the set point value if a second set of conditions are met; and

setting the difference of the above step as the error.

3. The method of claim 2, wherein the second set of conditions comprising:

the set point value is less than filtered set point value, and the phase value is less than the filtered set point value as well; and

the phase value is less than the set point value.

4. The method of claim 1 further comprising the steps of setting the error to zero if a third set of conditions are met.

5. The method of claim 1 further comprising the steps of keeping the initial error as the error if a fourth set of conditions are met.

6. The method of claim 1, wherein the first set of conditions comprising:

the set point value is greater than filtered set point value, and the phase value is greater than the filtered set point value as well; and

the phase value is greater than the set point value.

7. A VCT control system comprising:

a predetermined set point with a set point value;

a set point filter filtering the set point and deriving a filtered set point value;

an error signal generated by the control system through subtracting the measured phase value from the filtered set point value; and

an error zero treatment block having the set point value and the filtered set point value, the error zero treatment block comprising a method generating an error signal for reducing the excessive VCT response time caused by VCT undershooting its filtered set point, the method comprising the steps of:

providing an initial error;

setting the initial error as the error

subtracting the set point value from a phase value if a first set of conditions are met; and

setting the difference of the above step as the error.

8. The system of claim 7 wherein the method further comprising the steps of:

subtracting the set point value from a phase value if a second set of conditions are met; and

setting the difference of the above step as the error.

9. The system of claim 8, wherein the second set of conditions comprising:

the set point value is less than filtered set point value, and the phase value is less than the filtered set point value as well; and

the phase value is less than the set point value.

10. The system of claim 7, wherein the method further comprising the steps of setting the error to zero if a third set of conditions are met.1

11. The system of claim 7, wherein the method further comprising the steps of keeping the initial error as the error if a fourth set of conditions are met.

12. The method of claim 7, wherein the first set of conditions comprising:

the set point value is greater than filtered set point value, and the phase value is greater than the filtered set point value as well; and

the phase value is greater than the set point value.